

UTS 400 Universal Terminal System



The SPERRY UNIVAC® UTS 400 is a highly sophisticated, programmable terminal system that can be readily tailored in extent and functions to meet a wide range of application needs.

The UTS 400 is a microprocessor-based cathode-ray-tube display terminal featuring both firmware and software program logic. It can be used as either a single-station terminal, or in clusters of control and "slave" terminals to a maximum of 96 terminals on a single communication line.

The intelligence features of the UTS 400 assure versatility, accuracy, capability and growth potential. They provide high degrees of both operator independence and operator control. They relieve the host processor of many unnecessary burdens and promote increased efficiency.

The SPERRY UNIVAC UTS 400 can be included in multidrop or multiplexed configurations with both the UNISCOPE® 100 and UNISCOPE 200 display systems, as the protocol is compatible.

For diverse applications in any communication environment, the UTS 400 represents a significant step forward in intelligent terminal technology.

The total terminal system features a variety of peripheral devices to increase the capability of any terminal configuration. Included are magnetic tape cassette storage, high-capacity diskette storage and both impact and non-impact hard-copy printers. These devices can be installed in either single-station or cluster configurations.

SPERRY  **UNIVAC**



The UTS 400 Universal Terminal System

The SPERRY UNIVAC UTS Universal Terminal System 400 is a general-purpose, microprocessor-based, programmable, remote display terminal system, used for interactive data communications with a host processor.

The terminal system is available in two different configurations: a UTS 400 Master Display Terminal with one, or two slaves, or a separate controller, with a minimum of one and up to a maximum of six slaves. The slaves are keyboard/display stations only. Each slave cluster shares a microprocessor, working storage and other circuitry, including interfaces for communications and peripherals. These shared components are installed either in the UTS 400 master, or in the separate controller.

Both the UTS 400 master and the slave contain a display-refreshing buffer. The buffer makes possible the continuous display of a message, completely independent of the communications line, after the initial output from the host processor. This capability for independent operation also provides great flexibility in arranging cluster configurations.

Distributed Data Processing

Programmability adds a new dimension to the SPERRY UNIVAC UTS 400, where certain aspects of the terminal system operation can be tailored to the user's own requirements—

without diminishing any of the basic functions. Up to 24,000 bytes of Random Access Memory is available for user programs.

Programs are generated on a SPERRY UNIVAC host system, using an assembly level language or a COBOL compiler. The programs are then Down Line Loaded to the UTS 400—directly to memory, or to a storage device for later loading and execution.

The UTS 400 COBOL compiler conforms to the American National Standard X.3.23-1974. Extensions are provided to accommodate special features of the UTS 400—including syntax for interactive screen processing. File organization may be either sequential or relative and formatted or unformatted files as well as multiple files are supported.

The MAC/80 Assembler Language provides a basic programming tool for the UTS 400. It provides a way for the sophisticated programmer to write application programs and to interface to the firmware of the UTS 400. The Screen Management System (SMS 400) provides a set of control routines which interface with the UTS 400 firmware to support MAC/80 programs. It greatly simplifies the programming task by providing standard routines to perform common functions such as initializing and displaying screen formats, validating input fields, and input/output functions. A variety of utility routines are also provided.

An Edit Processor provides an easy and efficient way to create and update line-oriented data files. Lines can be inserted, replaced, deleted, or changed in any sequence, forward or backward. It is a stand-alone utility providing the capacity to create and update large files of data without being connected to a host.

The software for the UTS 400 makes it a versatile product for many Distributed Data Processing applications.

Peripherals

Also offered with the UTS 400 are—The Model 610 Tape Cassette System, the Model 800 Terminal Printer, the Communications Output Printer, the 0786 Matrix Printer, the 0791 Correspondence Quality Printer, plus the SPERRY UNIVAC Diskette Subsystem. A Magnetic Stripe Reader may be attached to any of the keyboards. The SPERRY UNIVAC Terminal Multiplexer and the modem products may also be used with this terminal system.

Magnetic Stripe Reader

The Magnetic Stripe Reader attaches to any UTS 400 keyboard to permit the reading of magnetically encoded stripes on plastic cards. The cards are credit card sized and may be encoded in either of two formats—the American Banking Association (ABA) or the International Air Transport Association (IATA).

The cards may be used to control access to the system by permitting the terminal, or the host, to verify the encoded data. While verification is being performed, the keyboard is locked and no data may be entered. Upon verification, the terminal or the host may unlock the keyboard permitting normal access.

Freestanding Diskettes

The freestanding diskette subsystem is a small, cost-effective On-Line storage device. Each of the dual drives holds one flexible disk about the size of a 45rpm phonograph record.

Control of each of the dual disk drives is selective; each drive is controlled independently of the other and only one drive at a time performs an operation.

The single-sided disk has a fully loaded capacity of 256K bytes of storage, for a dual-diskette capacity of 512K bytes. Each disk has 77 data tracks, with a format track of 26 sectors at 128 bytes per sector. Average access time is 260 milliseconds, with an average latency time of 83 milliseconds. The transfer rate is 31.25K bytes per second.

The freestanding dual-diskette mass-storage device offers low-cost, high-performance, random access storage. It is particularly well-suited to the storage of data at a remote terminal—where the data is most needed—and to relieve a host processor of some of its storage burden.

Tape Cassette

The SPERRY UNIVAC Tape Cassette System is a desk-top, Off-Line storage unit for the UTS 400, capable of containing 1,440,000 characters, with a single loading of the dual cassette transports. Data can also be quickly read from the unit, as well.

The tape cassette system permits large, batch-like transmissions to the central processor during low-traffic periods for the greatest efficiency in using the resources of both the UTS 400 universal terminal system and the host processor. Such transmission can be controlled entirely by the host processor, without the need for an operator at the UTS 400 terminal.



Model 800 Terminal Printer

The SPERRY UNIVAC Model 800 Terminal Printer is a compact, high-speed, exceptionally quiet, device with both Off-Line and On-Line printing capability of 300 characters per second. Its printing speed is 100 full 80-column lines per minute from a 96-character upper- and lower-case font. The Model 800 terminal printer uses a non-impact printing method to produce a single copy of all the data or text on a UTS 400 screen. It fits easily onto a desk top, and can be controlled from the UTS 400 keyboard.

Communications Output Printer

The SPERRY UNIVAC Communications Output Printer is a free-standing device that can print one to six copies of data or text at a maximum rate of 30 characters per second. It provides a maximum of 132 print positions horizontally, with line spacing of six lines per inch and character spacing of ten characters per inch. The printer uses edge-sprocketed forms 11" long, and from 3 $\frac{5}{8}$ " to 14 $\frac{7}{8}$ " wide. With the variable forms length feature, it can handle forms up to 999 lines in length.

Matrix Printer

The SPERRY UNIVAC 0786 printer is a character-by-character serial printer operating at 200 characters per second. The 0786 offers a 132 column capacity and a bidirectional, as well as a unidirectional, version.

Both versions use a 7 X 7 dot matrix in forming the characters. Either a 64 character or a 96 character set is available in ASCII and various national sets.

Compressed printing and a vertical forms control unit are options. Additional options of selectable 6 or 8 line per inch printing, a document parting bar and a 9 wire matrix to provide printing of lower case with descenders are also offered.

Terminal Multiplexer

With the SPERRY UNIVAC Terminal Multiplexer, multiple UTS 400 masters, master/slave clusters and controller/slave clusters can be connected into a data communications system at one system interface point.

The multiplexer provides system connection for up to 16 UTS 400 terminal systems (masters with or without slaves, controllers with slaves). The UTS 400 can be used on the same terminal multiplexer with both UNISCOPE 100 and 200 terminals.

The primary purpose of the multiplexer is to select—one at a time—those terminal systems that have information to send to the processor and provide line access to the selected UTS 400.

The terminal system with the highest priority condition is selected first. To save time and number of transmissions, the multiplexer also combines, with the current message, certain communications protocol responses from a previously selected UTS 400. The multiplexer does not detect or recognize characters; this function is performed by the UTS 400.

Correspondence Quality Printer

The SPERRY UNIVAC 0791 Correspondence Quality Printer provides typewriter quality printing at speeds up to 45 cps. It is a compact, table-top unit designed for easy operation and convenience.

The 0791 prints bidirectionally and uses a daisy print wheel to form the characters. Operator-interchangeable print wheels are available in 96-character fonts for various languages and face styles. Switches allow operator-selectable spacing of 10 or 12 characters per inch and 6 or 8 lines per inch. The printer accommodates cut sheets and continuous forms—sprocketed, non-sprocketed or card stock. Other features of the 0791 include bottom feed, manual and application program-selectable margin and print parameters, safety interlock switch and out-of-paper detection.

UTS 400 Master

FUNCTIONAL CHARACTERISTICS

Display format selections

960 characters
(12 lines by 80 characters)
1024 characters
(16 lines by 64 characters)
1536 characters
(24 lines by 64 characters)
1920 characters
(24 lines by 80 characters)

View area

10 inches wide by 7 inches high

Character generation

9 by 7 dot matrix, refresh rate of
60 or 50 times per second

Character generator

Basic 64, expandable to 96

Transmission code

7-level ASCII plus parity

Transmission mode

Half-duplex

Transmission facilities

Voice grade (telephone switched
network or private line)

Transmission type

Synchronous
Asynchronous

Transmission rates

Synchronous up to 9600 bits
per second
Asynchronous at 300, 600, 1200,
1800, or 2400 bits per second

Communications interfaces

EIA RS-232-C/CCITT V.24
MIL-STD-188

Data integrity provisions

Communications character and
message block parity with
automatic retransmission
Automatic retry with peripheral
transfers

Internal parity

Selective calling

Host processor can select
terminal system or peripheral
device or both; processor can
initiate data transfer from the
terminal system

Keyboards

Uppercase and numeric
Uppercase/lowercase and
numeric

Language selections

Domestic (U.S.)
Danish/Norwegian
French
German
Spanish
Swedish
United Kingdom
Katakana/English

Protected format

Protection of specified data fields
as defined by field control
characters

Special function keys

Keys that generate unique
characters for use as requests
or indicators, extending
operational and systems control.

PHYSICAL CHARACTERISTICS

Master

Width 20 inches
Height 13 inches
Depth 28 inches
Weight 65 pounds

Slave

Width 17 inches
Height 14 inches
Depth 16 inches
Weight 35 pounds

Controller

Width 16 inches
Height 13 inches
Depth 14 inches
Weight 35 pounds



POWER REQUIREMENTS

Nominal voltage:

100, 120, 200, 208, 220, or
240 volts

Nominal frequency:

50 or 60 Hz

Phases and lines:

Single phase, 3 wire

Nominal load:

0.200 kilowatt

Btu per hour:

600

PERIPHERAL DEVICES

SPERRY UNIVAC Model 610

Tape Cassette System

Read/write speed

6 inches per second (4800 bits
per second)

Dual cassette capability

1,440,000 characters
Width 16 inches
Height 8 inches
Depth 20 inches
Weight 34 pounds

Nominal primary power

100 or 120 volts at 60 Hz
200 or 220 volts at 50 Hz

**SPERRY UNIVAC Diskette
Subsystem****Storage**

256 kilobytes

Transfer rate

31 kilobytes per second

Width 16 inches

Height 13 inches

Depth 16 inches

Weight(with single diskette drive)
20 pounds**Nominal primary power**

100 or 120 volts at 60 Hz

200 or 220 volts at 50 Hz

**SPERRY UNIVAC Model 800
Terminal Printer****Print speed**

300 characters per second

Character set96 characters, uppercase and
lowercase

Width 18.5 inches

Height 7 inches

Depth 16.5 inches

Weight 34 pounds

Nominal primary power

100 or 120 volts at 60 Hz

100, 220 or 240 volts at 50 Hz

**SPERRY UNIVAC 0786
Matrix Printer****Print speed**

200 characters per second

Character set96 characters upper and lower
case

Width 22.6 inches

Height 19.0 inches

Depth 9.6 inches

Weight 55 lbs.

Nominal primary power

100 or 120 volts at 60 Hz

100, 220, or 240 volts at 50 Hz

**SPERRY UNIVAC 0791
Correspondence Quality Printer****Print speed**

45 characters per second

Character set96 characters, upper and lower
case

Width 26 inches

Height 10 inches

Depth 24 inches

Weight 35 pounds

Nominal primary power

100 or 120 volts at 60 Hz

200 or 240 volts at 50 Hz

**SPERRY UNIVAC
Communications Output Printer****Print speed**

30 characters per second

Character set63 printable characters,
uppercase

Width 38 inches

Height 36 inches

Depth 31 inches including
paper rack

Weight 100 pounds

Nominal primary power

120 volts at 60 Hz

220 volts at 50 Hz

**SPERRY UNIVAC Terminal
Multiplexer****Terminal system capacity**Interfaces up to eight masters
and/or controllers with
expansion features to interface
eight more; accepts one level
of cascading



